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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/772,064

02/03/2004

Romel N. Manatad

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12/28/2005

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EXAMINER

BREWSTER, WILLIAM M

ART UNIT

PAPER NUMBER

2823

DATE MAILED: 12/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/772,064

Applicant(s)

MANATAD, ROMEL N.

Examiner

William M. Brewster

Art Unit

2823

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 10-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>052404; 020405</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

On 23 December 2005, in a phone conversation with Patrick R. Jewik (Reg. No. 40,456), examiner informed attorney of a misnumbering of the claims in the grouping. The results below display the corrected numbering:

Applicant's election without traverse of Group I: claims 1-9 in the reply filed on 11 November 2005 is acknowledged.

Claims 10-20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 11 November 2005.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5, 6, 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Mehringer et al., US Patent No. 5,869,883.

Mehringer anticipates limitations from claim 1, a method for making a semiconductor package comprising:

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(a) in fig. 3, molding a molding material 13 around a leadframe 17 structure having a die attach region 10 and, in fig. 4 a plurality of leads 24, wherein the die attach region is exposed through a window in the molding material; and
(b) after (a), mounting a semiconductor die to the die attach region using a flip chip mounting process, col. 9, line , 9-55;

limitations from claim 5, the method of claim 1, in fig. 3, wherein the die attach region 10 comprises at least one aperture;

limitations from claim 6, the method of claim 1 wherein molding comprises placing the leadframe structure in a molding tool: 'formed around' the structure, col. 9, line 56 - col. 10, line 34;

limitations from claim 9, the method of claim 1 further comprising:

in fig. 4, attaching a heat plate structure 14 to the leadframe structure, col. 10, line 64-col. 11, line 29.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 3, 4, 7, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mehringer as applied to claims 1, 5, 6, 9 above, and further in view of Joshi et al., US Publication No. 2003/0075786 A1.

Mehringer does not specify the leads as source and drain leads, but Joshi does.

Joshi teaches

limitations from claim 2, the method of claim 1 wherein the semiconductor die comprises a vertical power MOSFET, p. 2, ¶ 26;

limitations from claim 3, the method of claim 1 wherein the plurality of leads include at

least one source lead and at least one gate lead, p. 1, ¶ 26;

limitations from claim 4, the method of claim 1 further comprising, after (b): in figs. 1-4,

reflowing solder 110 that is between the die attach region of the leadframe and the semiconductor die 101, p. 4, ¶ 47;

limitations from claim 7, the method of claim 1, in figs. 1-4, further comprising depositing solder 110 on the die attach region of the leadframe structure and within the window, p. 4, ¶ 47;

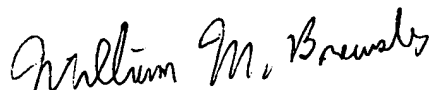
limitations from claim 8, the method of claim 1, in fig. 4, wherein the plurality of leads comprises a source lead 107 and a gate lead 105, pp. 2-3, ¶ 33.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to recognize that combining Joshi's process with Mehringer's invention would have been beneficial because it gives more wiring options for the practitioner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William M. Brewster whose telephone number is 571-272-1854. The examiner can normally be reached on Full Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on 571-272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in cursive script, appearing to read "William M. Brewster".

23 December 2005
WB